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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/863,128

05/22/2001

F. Patrick Doty

SD-8286

9592

7590

09/15/2004

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EXAMINER

SMITH, ZANDRA V

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/863,128	Applicant(s) DOTY ET AL.	
	Examiner Zandra V. Smith	Art Unit 2877	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-20,22-31 and 33-49 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-40 is/are allowed.
- 6) ☒ Claim(s) 1-3,5-20,22-34,41-43 and 45-49 is/are rejected.
- 7) ☒ Claim(s) 44 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

Art Unit: 2877

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12-34, 41-42, 45-46, 47/12, 47/50, and 48-49 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The relative composition of the electrodes is not disclosed in the specification.

### ***Claim Objections***

Claim 47 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 47 improperly depends from itself.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-6, 8-11, 43 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by *Ikeuchi et al. (US 6,524,760 B1)*.

As to **claims 1-3**, Ikeuchi discloses an image receiving sheet and recording process, comprising:

a mixture of  $\pi$ -conjugated polymers having an electrical resistivity of at least or greater than  $10^9$  ohm-cm (col. 12, lines 5-12).

As to **claims 5-6**, Ikeuchi discloses everything claimed, as applied above, in addition the  $\pi$ -conjugated polymers may be polythiophenes (col. 7, line 68) and polyphenylenevinylene (col. 8, line 2).

As to **claims 8**, Ikeuchi discloses everything claimed, as applied above, in addition organic polymers are mixed with the  $\pi$ -conjugated polymers (col. 5, line 45).

As to **claim 9**, Ikeuchi discloses everything claimed, as applied above, in addition the organic polymers included polystyrene (col. 5, line 50).

As to **claim 10**, Ikeuchi discloses everything claimed, as applied above, in addition metal is incorporated into the  $\pi$ -conjugated polymer structure (col. 7, lines 20-25).

As to **claim 11**, Ikeuchi discloses everything claimed, as applied above, in addition the metal is aluminum (col. 7, line 27).

As to **claim 43**, Ikeuchi discloses everything claimed, as applied above, in addition salts of aluminum are provided (col. 7, lines 17-18).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Ikeuchi et al. (US 6,524,760 B1)* in view of *Friend et al. (5,523,555)*.

As to **claim 7**, Ikeuchi discloses everything claimed, as applied above, with the exception of polyaromatic hydrocarbons, however to do so is well known as taught by Friend. Friend discloses the use of polyaromatic hydrocarbons (col. 5, line 65-68). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a polymer with desired features to produce the desired electro luminescent effects.

Claims 47/1 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Ikeuchi et al. (US 6,524,760 B1)* in view of *Yamamoto et al. (5,206,525)*.

As to **claims 47/1 and 49**, Ikeuchi discloses everything claimed, as applied above, with the exception of applying an external stress to orient the polymers, however to do so is well known as taught by Yamamoto. Yamamoto discloses an electric element for controlling conductivity in  $\pi$ -conjugated macromolecular materials that includes applying and external stress (stretching, col. 3, lines 3-9). It would have been obvious to one having ordinary skill in the art at the time of invention to provide an external stress to the material to orient the molecules to provide a stable electric field.

***Allowable Subject Matter***

Claims 35-40 are allowable over the prior art of record.

Claims 44 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious, applying external stress to the polymer to change the physical properties, an array of wires embedded in a  $\pi$ -conjugated material, the array comprising a first set of parallel wires intersecting orthogonally with a second set of parallel spaced apart wires, or the  $\pi$ -conjugated polymer having a C:H ratio and density equal to that of human skin, in combination with the rest of the limitations of the claims.

***Response to Arguments***

Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Camberlin et al. (5,324,827)*** disclose a non-linearly optically active material for use in the production of electro-optic devices.

Art Unit: 2877

*Friend et al. (5,698,048)* disclose photoresponsive materials that includes a sensor having a  $\pi$ -conjugated polymer sandwiched between two electrodes.

*Jung et al. (6,069,353)* disclose a polymer photodetector that includes a sensor having a  $\pi$ -conjugated polymer sandwiched between two electrodes.

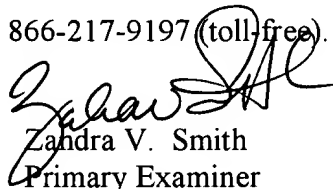
*Yu (US 6,300,612 B1)* discloses an image sensors made from organic semiconductor that includes a sensor having a  $\pi$ -conjugated polymer sandwiched between two electrodes.

### ***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Zandra V. Smith  
Primary Examiner  
Art Unit 2877

Application/Control Number: 09/863,128

Page 7

Art Unit: 2877

September 9, 2004